In Their Shoes: Impact of Emotions on Marital Satisfaction, Communication, and Technology in Spouses of Deployed Military

by

Katrina D. Powell

A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Approved November 2011 by the
Graduate Supervisory Committee:

Nicole A. Roberts, Chair
Mary H. Burleson
Deborah Hall

ARIZONA STATE UNIVERSITY

December 2011

DISCLOSURE STATEMENT

The views expressed in this article are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense or the U.S. Government.

ABSTRACT

Separation from a loved one is a highly stressful event. The range and intensity of emotions accompanying such a separation arguably are amplified when one's spouse deploys. This thesis examines at-home spouses (AHSs) of deployed military and how emotion, marital satisfaction, and communication are impacted throughout the deployment cycle. Additionally, I explore technology as a possible coping mechanism to help AHSs adapt and overcome stressfulness of deployment. One hundred sixty-six married females with a partner currently deployed, anticipating deployment, or recently returned from deployment completed an on-line survey. It was predicted AHSs would experience specific emotions during each phase, categorized as "anticipatory," (e.g., anger, worry) "absence" (e.g., lonely, sad) or "post" (e.g., happiness, relief); marital satisfaction also was predicted to be higher among spouses whose partner recently returned from deployment versus was deployed or anticipating deployment. Data showed AHSs whose partner was anticipating or currently deployed reported more "anticipatory" and "absence" emotions than AHSs with a recently returned partner. The former two groups did not differ in these emotions. AHSs with a recently returned partner reported more "post" emotions than the other two groups. Marital satisfaction did not differ based on deployment status. It was also predicted that among

AHSs with a currently deployed partner, less negative emotion upon deployment would be associated with more frequent communication during deployment. Data showed AHSs who reported less negative emotion upon deployment engaged in more frequent communication with their deployed partner. Lastly, I predicted AHSs whose partners are currently deployed and who prefer modes of communication allowing direct contact (e.g., Skype) will experience less negative emotions than AHSs who prefer indirect contact (e.g., e-mail). Data showed reports of negative emotion did not differ based on preference for direct versus indirect communication. Therefore, negative emotions may develop and persist before and during deployment, but when the partner returns home, spouses do experience a rebound of positive emotions. Additionally, emotions at the time of deployment may be useful in predicting spouses' communication frequency during deployment. Findings aim to provide knowledge of family life during separation and explore technology as a possible coping mechanism for AHSs.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank God for blessing me with the strength, courage, and wisdom throughout this entire process!

To my family, friends, co-workers, and employer-without your support, this would have been virtually impossible.

I would like to thank my committee chair, Dr. Nicole A. Roberts, for her unwavering support, limitless direction, and knowledge. Her continuous insight has been instrumental in my success throughout my graduate studies. I would like to thank my committee members, Dr. Mary H. Burleson, and Dr. Deborah Hall for their significant contributions and expertise.

Thank you to my fellow graduate students who helped in data analyses, recruitment, conducted literature reviews, and provided criticism when needed. Your contributions were much appreciated.

Special thanks to the numerous websites, blogs, and organizations who agreed to share the information for this project to members of their communities to assist in subject recruitment.

Lastly, but most importantly, I would like to thank the at-home spouses and partners who willingly shared with me their stories about deployment. I am honored to have been able to work with such a strong group of individuals!

TABLE OF CONTENTS

In Their Shoes: Impact of Emotions on Marital Satisfaction, Communication, and Technology in Spouses of Deployed Military

I wear no uniforms, no blues or army greens
But I am in the military in the ranks rarely seen
I have no rank upon my shoulders, salutes I do not give
But the military world is the place where I live
I'm not in the chain of command, orders I do not get
But my husband is the one who does, this I cannot forget
I'm not the one who fires the weapon, who puts my life on the line
But my job is just as tough. I'm the one that's left behind
My husband is a patriot, a brave and prideful man,
And the call to serve his country, not all can understand
Behind the lines I see the things needed to keep this country free
My husband makes the sacrifice, but so do our kids and me
I love the man I married. Patriotism is his life
But I stand among the silent ranks known as the military wife

- Anonymous

As a military spouse, relocation every two to four years, developing and maintaining friendships at new and old bases, taking care of a household, and juggling a family and/or career are just some of the many challenges encountered on a routine basis. While challenging, these experiences are somewhat common and expected. There are times, however, when at-home spouses (AHSs) are faced with a much different and less routine challenge: deployment. During deployment, military members can be taken away from their families for several months to as long as 18 months, disrupting the normal family environment. Though conflicting and limited, several studies and literary findings have shown that there are significantly higher

rates of stress and negative emotions in AHSs during times of partner's deployment (Burton et al., 2009; Lapp et al., 2010; Medway et al., 1995; Merolla, 2010). As more members of the military continue to deploy for longer periods of time, the probability of higher rates of stress and negative emotions becoming routine is inevitable and bound to have an impact on marital satisfaction, as well as AHS's psychological and physical well-being.

Better methods of how to reduce these vulnerabilities are long overdue- for the overall stability of the AHSs. Particularly close attention should be given to possible solutions to assist in helping this population cope and alleviate negative emotions and stressors. Several studies (Lapp et al., 2010; Merolla, 2010) have found that many AHSs have reported that regular communication with their deployed partner as being instrumental to successfully coping and adapting to deployment. Research (Diamond et al., 2008; Lapp et al., 2010; Rossetto, 2010) conducted within both the civilian and military populations have shown frequent, open, and positive communication to be vital in relationship maintenance/satisfaction and healthy psychological outcomes during separation.

In today's advanced society, one of the most commonly used methods of communication is technology. During long distance

separation, such as deployment, technology has become crucial in helping couples remain in contact with one another. This particular form of communication can be viewed as a possible solution to help AHSs not only remain in contact, but as an avenue to help reduce negative emotions and stress. In addition, frequency of communication (somewhat frequent, frequent, constant) and mode of technology (e.g. indirect or direct), during deployment can be examined.

The goal of the present research was to examine emotions, communication, marital satisfaction, and technology in spouses of individuals who are anticipating deployment, currently deployed, and recently returned from deployment.

Background

Since 2001, over 2 million troops have deployed in support of conflicts such as Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and most recently, Operation New Dawn (OND) (Department of Defense [DoD], 2011). To date, there are over 1 million active duty military and Reserve spouses (Department of Defense [DoD], 2011) who face the numerous challenges of deployment, right alongside their deployed partner. Although this population does not physically fight in the war zone, they are in fact, fighting their very own personal battle on the home front. As the military member

prepares for deployment, deploys, and returns home after to reintegrate with his/her family, the AHS continues experiencing a myriad of emotions and a number of stressors as a result of this disruption to their family dynamic.

Since stressors vary throughout the deployment cycle and affect AHSs in different ways (deBurgh, 2011; Falcone, 2010; Lapp et al., 2010), it is important to individually evaluate each deployment phase for a better understanding of the impact on the remaining spouse, family, and home-life:

Pre-deployment. According to Military.com, one of the largest resources for military information, the pre-deployment phase typically occurs 6-8 weeks before deployment. Many times, the deployed member and his/her partner are given an even shorter notice and must deal with the transition relatively quicker. During this phase, the family is usually engaging in time consuming tasks such as preparing legal documents, handling finances, and settling childcare matters. Concurrently, the remaining spouse may have separate responsibilities of his or her own (i.e, work, school, volunteer activities) he or she may have to attend to. These sometimes sudden and multiple responsibilities often lead to feelings of anxiety and even resentment toward the military member and the impending deployment. In

addition, AHSs may experience fear, denial, and feeling as if they're "placing their life on hold" during this phase (Lapp et al., 2010). This wide range of emotion is relatively common and differs between spouses. In fact, in their review, Peebles-Kleiger & Kleiger (1994) described this stage as one having extreme tension, irritation, and distancing between anticipating couples. During this period, it is not uncommon for spouses to engage in arguments and for level of communication to decrease. Sahlstein et al. (2009) also found this phase to be marked with uncertainty and powerlessness. Wives reported feeling uncertain about partner's deployable location, deployment departure date, and effects of the deployment on their family (Sahlstein et al., 2009).

Deployment. In interviews with 18 Guard and Reserve spouses whose husbands and wives were currently deployed or recently returned from deployment to Iraq or Afghanistan, Lapp et al. (2010) identified five primary stressors reported during the deployment phase, including: worrying, loneliness, and feeling as if they were pulling double duty (p. 51). Additionally, AHSs will often have to adjust to a number of different and/or new roles during the separation.

These changes in roles can be small or large: mowing the lawn, paying the bills, attending the child's PTA meetings, or making repairs to the family vehicle. For most, this is a disruption to their regular home-life and warrants adjustment and adaptation.

Length and location of deployment (combat vs. non-combat zone) have been both identified as other noteworthy stressors during deployment (Newby et al., 2005; Park, 2011). As military deployments have increased drastically over the past few years, service members fighting in OEF/OIF have had to face an increasing likelihood of multiple and extended tours. It is not uncommon for some members to have had deployed as many as two to three times, lasting anywhere from four months to a year and a half at a time, during these conflicts. AHSs who encounter multiple and extended tours could be at an even greater risk of depression, loneliness, and problems within their relationship (McLeland et al., 2008; Newby et al., 2005; Park, 2011).

Even further, multiple studies have been conducted assessing the relationship between attachment styles and separation in military and civilian populations (Basham, 2008; Diamond et al., 2008; Medway et al., 1995; Vormbrock, 1993) and have found effects in separation differs based on AHS's attachment style and interaction with their deployed partner.

Other stressors, such as pregnancy (especially first time or high risk), parenting, lack of communication, and being separated from family and friends could also intensify negative emotions and maladaptive behaviors during deployment (Haas et al., 2005; Medway et al., 1995). Haas et al. (2005) found women whose partners were deployed reported higher rates of stress during pregnancy. These women also reported changes in their attitude and changes in their daily habits, such as eating.

Post-deployment. In most cases, returning from deployment may be just as stressful as pre-deployment and deployment, making this phase critical in the deployment cycle (Flake et al., 2009; Huebner et al., 2007; McFarlane, 2009; Peebles-Kleiger & Kleiger, 1994; Sheppard et al., 2010). Peebles-Kleiger & Kleiger (1994) reported that as much as six months to a year after reuniting, some Desert Shield/Storm personnel and their family still experienced difficulties attributed to deployment. Post-deployment has been described as the period which spans between the end of the deployment to around three to six months after the deployed member has returned home (Sheppard et al., 2010). In this time, reintegration and reunion take place: the deployed partner assumes his/her spousal or parental role and resumes prior responsibilities, while the spouse and children try to make

readjustments to having the member back home. While it may appear as if the family should be able to "bounce back" and regain their previous stability, difficulties do occur. Most of these difficulties are the result of changes in new roles, changes in the deployed member (e.g., PTSD, TBI), and other results of combat exposure (physical injury, emotional numbing, shock). Due to these issues and more, spouses reported the return of the deployed partner as a hard and difficult transition and often felt as if they were having to "start over" (Lapp et al., 2010).

Echoing the previous findings on the deployment cycle and emotions, in a study examining Marine, Navy, and Navy Seal couples before, during, and after deployment, Falcone (2010) reported several areas of interest in wives' experiences during the deployment cycle. During impending deployment, wives tended to experience feelings of worry; during deployment, wives experienced an "emotional rollercoaster," and felt communication was important (pp.113-117); and during post-deployment, wives experienced "readjustment to married life" and felt as if they had strengthened their marriage due to deployment (pp. 133-136). These findings not only highlight the importance of stressors on emotion during deployment, but also their effects on marital satisfaction.

Relationship implications. Relationship issues during separation are a relatively common occurrence and should be closely evaluated. Stressors and negative emotions have been found to be related to marital satisfaction during deployment (Burrell et al., 2009; McLeland et al., 2008; Medway et al., 1995; Vormbrock, 1993).

Results from studies on these two variables have been mixed. The majority of these studies have found a direct relationship between stress or negative emotion and marital satisfaction (Burrell et al., 2009; McLeland et al., 2008; Medway et al., 1995; Vormbrock, 1993), while Allen and colleagues (2010), reported having found an indirect relationship in marital satisfaction and deployment when examining husband's PTSD symptoms.

Overall, military life (frequent moves, job stress, distance from family and friends) could pose marital complications, but during deployment, these issues are intensified due to a number of problems: lack of intimacy and communication, social support, and perceived stress (Allen et al., 2010; Medway et al., 1995; Merolla, 2010). In fact, McLeland et al. (2008) reported lower marital satisfaction not only during deployment, but during pre-deployment and post-deployment as well.

In 2008, it was reported that there were over 25,000 cases of divorce within the military population; a slight increase than the year before (Department of Defense [DoD], 2011). While one should not assume deployment as the sole purpose of dissolution, it is highly probable separation could have been a contributing factor in a large number of these cases. Understanding these factors could be instrumental in helping AHSs solidify their marriage and assist in learning to cope with deployment.

Coping Strategies and Support Systems. Problems with coping may lead to even further disruption in the home after the military member has deployed. Instability, stress, anxiety, and avoidance/denial type coping strategies add to these tensions (Huebner et al., 2007; Medway et al., 1995). For AHSs with children, this has dire consequences. The remaining spouse (usually the wife) is left to take care of the children, financial matters, work, and routine events, normally handled by both spouses. This reorganization of responsibility may seem overwhelming: causing changes in the parent's behavior toward the child; depression in the remaining spouse; potentially resulting in frequent arguments, lack of communication, and other problems in the home.

In multiple studies examining military families during deployment, the remaining partner's coping strategies was found to be one of the most, if not the most important factor, in predicting coping strategies/maladaptive behaviors in their children (Flake et al., 2009; Huebner et al., 2007; Medway et al., 1995; Sheppard et al., 2010).

Medway et al. (1995) reported the number of AHSs who were being distressed by war to be an astonishing 66%, with 22% who have difficulty coping with the experience. These statistics reveal that there is a need for more positive coping strategies in this population.

AHSs who have learned to cope with deployment revealed that staying active and keeping busy (i.e., school, work, and doing something you would be unable to do while your partner was home) was instrumental in making a smoother transition during deployment (Lapp et al., 2010; Merolla, 2010). Others recommended keeping a journal and finding a new hobby as a method to alleviate worry and stress and as a means to feel "connected" to the deployed partner (Merolla, 2010).

In addition to positive coping strategies, support systems have also been shown to be beneficial in helping AHSs in navigating through deployment. Family, community and church members, co-workers, and other military spouses are instrumental in recognizing

the need for and providing social support for those remaining at home during this transition (Lapp et al., 2010; Merolla, 2010; Wiens & Boss, 2006). Furthermore, numerous military facilities have established programs to assist military families in adapting to separation and military lifestyle. Online resources such as Military One Source have been integral in providing emotional, as well as financial support for families during deployment. Flake et al. (2009) found spouses and children who feel supported have significantly less emotional and behavioral problems than those who do not feel supported. These findings show that these programs are greatly appreciated and widely used within the military community.

Spouses have also indicated using support groups to assist in dealing with deployment (Merolla, 2010). Opportunities to discuss issues pertaining to deployment (unruly children, job stress, worry about partner) with someone (i.e., another military spouse) who may be or have encountered the same problem can be instrumental in helping AHSs develop somewhat of a sense of ease.

Interviewed spouses who participated in these groups felt having someone who can relate to similar experiences was more beneficial than having friends or family relay sympathy or try to understand what they experienced (Merolla, 2010). Developing

support groups for AHSs during deployment, which focus on relationship skills, would provide means of support for loneliness and provide opportunities to discuss partner deployment more openly (Gottman et al., 2011). According to Gottman et al. (2011), this strategy will also help to shape resiliency in families, allowing them to engage in more intimate discussions (p.56) and positive communication during deployment.

Communication and Technology. According to AHSs, regular communication is instrumental during separation (especially if the deployment is lengthy or in a combat zone) (Lapp et al., 2010; Merolla, 2010). Engaging in frequent contact with the deployed partner was said to have led AHSs to feel less stress and worry about partner's well-being. Communication has also been shown as a means to maintain marital satisfaction.

Merolla (2010) sought out to study relationship maintenance (connectedness) by interviewing 33 wives whose partners were currently deployed. In his research, he was able to highlight several key factors in the areas of communication and relationship happiness during deployment. Merolla (2010) examined the usage of communication (frequency and type) wives used to foster relationship maintenance and found that over 90% of his participants engaged in a

wide range of activities, such as: taking part in events that did not pertain to their deployed partner; developing and maintaining routines as a means of frequent communication; participating in activities which produced independence; and using children as a form of support (p.11).

More importantly, Merolla (2010) identified factors which could hinder feelings of connectedness. These included: limited phone availability (due to security, privacy concerns, unreliable connection), and partner preference (i.e., e-mail vs. telephone). Based on Merolla's qualitative assessment, respectively, one can view communication through technological usage as an overly positive event; one intended to maintain "normalcy" (p.15) and evoke a sense of safety. Lapp et al. (2010) also found that communication provided by the Internet (i.e., e-mail and Webcam) played an intricate role in mitigating stress and worry brought on by feelings of uncertainty about their deployed partner.

As exemplified in Merolla (2010) and Lapp et al. (2010), one potential avenue to help in alleviating negative emotions during deployment is communicating through technology. Over the years, much has changed as far as the way in which deployed members are able to contact their families.

During past conflicts, it was not uncommon to receive letters from deployed troops weeks after the initial postal date, leaving the family back at home in a period of uncertainty about the member's safety. Now, technological advancements could potentially eliminate this issue. "Snail mail," and sparse, brief calls home have been replaced by social networking sites, such as Facebook, and other forms of communication such as Skype and instant messenger.

With over 800 million users (New York Times, Facebook, Inc., 2011), Facebook is undoubtedly the largest social networking site to date, becoming a global phenomenon in what seemed to have been overnight. The site provides instant access to people of all ages, contact to different countries, and the ability for information to be distributed by the masses with a push of a button. Most recently, Facebook added video calling, a feature which could make communicating from a distance even easier. Video calling would allow the AHS and their deployed partner to communicate with one another via their Facebook profile, webcam, and microphone. The new feature also allows members to leave a video message if the intended caller cannot be reached. This source will not only provide the deployed partner with the ability to stay actively engaged in his/her family's life throughout the deployment, no longer completely having to detach

themselves from their role as head of household, caretaker, and disciplinarian (to children), but also decrease the negative emotions such as being a single parent and abandonment, two of the most commonly referenced burdens of deployment. For the AHS, Facebook's video calling could be seen as a way of having the deployed partner near as a support system, although physically separated. Video calling and other Facebook applications would allow the deployed partner and his/her family the opportunity to somewhat maintain their individual positions, ultimately reducing not only anxiety, depression, and other negative emotions in AHSs, but the ability to later reestablish themselves in any of these roles (Lincoln et al., 2008) upon reunification /post-deployment. The capability to leave a message also includes an additional benefit for AHSs. Due to the differences in time, AHSs could try to contact their deployed partner and leave a video recorded message of their choice.

Another technological form of communication is Skype. This mode allows people to make free calls over the Internet, send/receive instant messages, and use Webcam to conduct video calls (Aboutskype.com) across the country in only seconds. With over 23 million users, this is another tool when wanting to initiate "live" chats between deployed partners and their AHSs. As discussed in the

previous studies (Merolla, 2010; Lapp et al., 2010; Lincoln et al., 2008; Rossetto, 2010), these technologies have the capability to bring families closer together, making them feel connected, though thousands of miles apart. For AHSs who are experiencing anxiety and depression due to fear, images of the deployed partner will be reassuring. In addition, these advancements provide a means of constant involvement in the AHS's life. Similar to Facebook's video calling, the video and live conversation via the Webcam component of Skype is beneficial because partners at-home and deployed could engage in more frequent contact, further making the post-deployment a smoother transition and less of a time of "catching up" after months to years of absence.

Several versions of Instant messenger (e.g., AOL, Yahoo, MSN) have been developed over the years. According to Windows Live Messenger's website (formerly MSN messenger), the site states their past and updated capabilities as including video and voice calls, the ability to share files, and the ability to conduct several conversations at one time (Windows Live Messenger, 2011).

Facebook, Skype, and Instant messenger services also currently provide capabilities to use their live video chats via cell phone, an additional feature which will allow AHSs and their deployed partner to remain in contact. Having these capabilities in a mobile capacity could

put AHSs who juggle careers, children, and volunteer activities outside of the home at ease from anxiously waiting by the telephone or computer for their deployed partner's calls or messages. Even further, several of these services have now integrated with one another (i.e., MSN messenger and Facebook and Skype and Facebook) (Facebook Video Calling, 2011; Windows Live Messenger, 2011), making communication a one-stop shop, more convenient, and more "normal" during deployment.

While little research has been conducted on the impact of technology use and military deployment (Carter et al., 2011; Greene et al., 2010; Gottman et al., 2011; Pincus et al., 2005), literature has shown Internet usage during stressful life events to also be a successful coping strategy (Lapp et al., 2010) for AHSs. Internet usage could also provide a means of having the deployed partner be psychologically present, though physically absent (Wiens & Boss, 2006). Additionally, Spira et al. (2010) found that deployed members have found services provided by the Internet to be very useful when notifying family members of key events, such as being injured- only hours after its occurrence- which is beneficial information for AHSs.

Another mode of technology frequently used is e-mail. E-mail has been an available technology for several years (Internet.com), but

during deployment, it could be used as a personal form of contact between deployed partner and AHSs. For instance, in some of Merolla's interviewee's responses, it was stated that privacy during phone conversations was an issue (pp.17-18). Instead, e-mail was used as an alternative mode of contact. This provides the couple with a more confidential means of communication.

Not only are services provided by the Internet useful, but so are other modes of communication which have been around for a longer period of time. Although developed in the nineteenth century, telephones have consistently remained an instrumental mode to communicate with family and friends who are physically separated. This mode of communication has been reported to be one of the most preferred methods when conveying relationship and personal information (Rossetto, 2010; Schumm et al., 2004). During telephone conversations, AHSs are able to hear their partner's voices in real time. Telephone calls during deployment could help ensure AHSs of their deployed partner's safety and well-being. For example, AHSs could use telephones as a way to detect problems their deployed partner may be experiencing based on their tone of voice. It may also be used as a method of informing the deployed partner about updates in the family back at home.

In sum, technological capabilities such as Facebook, Skype, instant messenger, and telephone provide the deployed partner and AHSs the opportunity to establish a stable, regularly connected environment and home life, potentially offsetting lower rates of marital satisfaction, negative emotions, and uncertainty about deployed partner's safety and well-being during deployment.

Lastly, even when not involving direct communication with one's deployed spouse, technology could be used as a means of coping. For AHSs who do not wish to openly discuss or share their experiences, the Internet could serve as an effective coping mechanism. AHSs could use social networking avenues, such as Facebook and even originate or respond to blogs to discuss the emotions they are experiencing due to the deployment. Openly discussing partner deployment through these resources could possibly provide AHSs with a sense of not being alone and a means of "getting it all out" during deployment (Gottman et al., 2011; Rossetto, 2010).

Additionally, certain modes of technology such as Skype (real-time, substitute for face-to-face) could be more beneficial in reducing negative emotions compared to others (e.g., e-mail). Real-time contact with the deployed partner could serve as a better avenue of eliminating distress. Real-time contact could come in the form of Skype, Facebook

(video calling), and telephone conversations. Being able to "see" and "hear" the deployed partner (though thousands of miles away) could be considered a great way of maintaining the relationship and AHS's emotions during deployment.

Diamond et al. (2008) sheds light on this particular subject. In an analysis of 42 civilian couples, who frequently experienced separation, the researchers examined the relationship between attachment styles, level of contact during separation, and its effect on emotion regulation. Findings showed at-home partners high in attachment anxiety did have the highest declining scores in positive affect when phone conversations were shorter, suggesting that pre-existing emotional reactions or feelings about the relationship can interact with communication during separation in important ways.

Although Diamond et al. (2008) studied a short-term separation (4-7 days) in a civilian population; these results could be applied to further understanding long-term separation during deployment and communication in military AHSs. Even further, these findings raise the questions: Is it possible that during deployment, emotions could be impacted by more frequent communication and certain modes of technology or contact? If so, what level of communication and mode of technology or contact would be most beneficial to this population?

Lastly, will these modes serve as a coping mechanism to help AHSs better adapt to "the emotional rollercoaster" throughout the deployment cycle?

OVERVIEW OF CURRENT STUDY

This thesis examines a relatively understudied population: at-home spouses of deployed military. Specifically, I evaluated emotion, communication, and marital satisfaction and how these variables were impacted throughout the deployment cycle (before, during, and upon return). Additionally, this thesis focuses on technology (e.g., Skype, Facebook) as an instrumental coping mechanism to help members of this population adapt to and overcome the stressfulness of partners' deployment.

For the purpose of this study, emotions are referred to as "anticipatory emotions" (Anticipating phase), "absence emotions" (Current deployment phase) and "post-emotions" (Recently returned phase), respectively.

HYPOTHESES

Based on previous research (Diamond et al., 2008; Lapp et al., 2010; Merolla, 2010), it is hypothesized that:

H1: Spouses with a partner anticipating deployment will report experiencing more fear, anger, annoyance, sense of burden, disgust, inconvenience, and worry (i.e., "anticipatory emotions") when thinking about their partner's deployment; (2) spouses with a currently deployed partner will report experiencing more of a sense of

abandonment, emptiness, loneliness, neglect, sadness, and feeling like a single parent, as well as more independence and pride (i.e., :absence emotions") when thinking about their partner's deployment; and (3) spouses with a partner who has recently returned from deployment will report experiencing more completeness, contentment, excitement, happiness, and relief (i.e., "post-emotions"), as well as greater marital satisfaction, when thinking about their partner's return from deployment. Groups were not expected to differ with respect to reports of stress and anxiety, as these emotions are thought to characterize all aspects of the deployment cycle.

H2: Among spouses whose partners are currently deployed, less negative emotional experience, particularly fewer absence-related negative emotions, will be associated with more frequent communication with their deployed partner.

H3: Among spouses whose partners are currently deployed, those who prefer technological forms of communication that allow for more direct or immediate contact (e.g., Skype) will report less negative emotion with respect to their partner's deployment than those who prefer indirect modes of contact (e.g., e-mail).

METHOD

Participants

The present study consisted of 166 female at-home military spouses whose partners (all male) were currently deployed (n = 80), anticipating deployment (n = 56) or recently returned from deployment (n = 30). Participants were recruited via announcements posted on websites and sent to listserves of online support groups for military spouses, as well as delivered on-line (electronic announcements) and in-person (flyers/announcements) to military spouse organizations.

Overall, participants were predominantly Caucasian (83.1%), on average 30.1 years of age (ranging from 19-58) and married an average of 6.4 years (SD=5.5). Approximately half were married to a military member holding the rank of E-4 to E-6; 14.5% were the wives of O-1's to O-3's; 12.7% were the wives of E-7's to E-9's; 5.4% were the wives of E-1's to E-3's; 5.4% were the wives of O-4's to O-6's; 1.8% were the wives of CW-3's to CW-4's; and 10.2% did not report their partner's rank. Close to half (47.6%) had partners who were in the Army; 18.1% Navy; 18.1% Air Force; 6% were Marine's; 0.6% were Coast Guard; and 9.6% did not report their partner's military branch. Sixty-six percent had one or more children; and 60.2% had experienced one or more deployments throughout their relationship with their partner.

This study was approved by the university's Institutional Review Board (IRB). AHSs completed the survey directly on-line via a link provided on the recruitment flyer or announcements. Participation for this study was voluntary and all responses were anonymous.

Procedure

AHSs were directed to an on-line survey containing a cover letter with a brief description of the study and instructions on how to complete the survey. Participants were informed that the survey was approximately 35-45 minutes and were encouraged to allot enough time to complete the survey in one sitting. Participants were not able to go back into the survey and finish once exited. Participants were instructed to select a codename of their choice (unrelated to their actual name) to include in the survey in case of technical difficulties. Completion of questionnaires was considered consent to participate in the study.

Upon completion of the survey, interested participants clicked on a separate link which allowed them to enter into a drawing for one of several prizes: a spa day, a $50 Target gift card, a camera or webcam, a gift certificate to a JC Penney photo studio for a family photo, or a certificate to Staples for a family calendar.

Participants were then asked to provide their contact information for the purpose of the drawing. In addition, participants had the option of providing their contact information to receive a summary report of the findings. In both instances, it was made clear that contact information would only be used for the stated purpose and would not be linked to the participant's survey responses.

Measures

Deployment status. Partner deployment status was determined by the following series of questions: Is your spouse/partner currently deployed?; Is your spouse/partner anticipating deployment soon?; or Did your spouse/partner recently return from deployment? Based on the participant's responses, the survey re-directed the participant to one of the three appropriate sections.

Marital satisfaction. A modified version of the Locke-Wallace Marital Adjustment Test (Locke & Wallace, 1959) was used to measure marital satisfaction. Participants used a 0 to 6 scale, with 0 being "Very Unhappy," 3 being "Happy," and 6 being "Perfectly Happy" to rate their relationship satisfaction. This question has been shown to be a significant indicator of marital satisfaction (Johnson et al., 1986).

Deployment experiences. Due to no established standard pre-deployment, deployment, or post-deployment questionnaires for military AHSs, most questionnaires were formulated for this particular study. The deployment experiences questionnaire is a compilation of questions from the research team and current literature. Questionnaires assessed emotional responses to deployment experiences, including communication and use of technology.

Questionnaires were divided into three separate sections: (1) Anticipating deployment; (2) Currently deployed; or (3) Recently returned from deployment. Multiple choice, open-ended, fill-in-the-blank, and Likert-type rating scale questions were included. Questions specifically pertaining to pre-deployment, included: Do you expect your spouse/partner will be deployed (within the next 3 months, within the next 4-6 months, etc)?; Which best described level of communication with spouse/partner pre-deployment (Very infrequently, somewhat infrequently, etc)?; and a 9-point Likert-type emotional scale to assess feelings toward upcoming deployment.

Sections 2 and 3 contained similar types of questions and scales as Section 1 (rephrased appropriately for section). Additionally, in Section 3, participants were asked to rate communication level before

deployment and post deployment, as well as to complete the emotion rating scale (previously mentioned in Section 1) to assess emotions before deployment, as well as post-deployment.

Emotion. Depending on partner deployment status, participants were asked the following questions: (1) Please rate how much each of these feelings applies to you when you think about your spouse/partner's UPCOMING deployment (Anticipating phase); (2) Please rate how much each of these feelings applied to you WHEN YOUR SPOUSE/PARTNER DEPLOYED (Current phase); or (3) Please rate how much of these feelings applies to you since your spouse/partner HAS RETURNED FROM DEPLOYMENT (Recently returned phase). See Table 1 for further details.

In each section, participants were asked to rate how much specific feelings applied to them on a 0 (Not at all) to 8 (Extremely) scale pertaining to their partner's upcoming, current, or recent return from deployment. The following 22 emotions were listed in alphabetical order: abandoned, afraid, angry, annoyed, anxious, burdened, complete, content, disgusted, empty, excited, happy, inconvenienced, independent, like a single parent, lonely, neglected, proud, relieved, sad, and worried. The specific emotions included were based on previous emotion research (e.g., Ekman, Friesen, & Ancoli, 1980;

Roberts & Levenson, 2006) and modified to include emotions relevant to military deployment (Logan, 1987; Peebles-Kleiger & Kleiger, 1994; and Military.com).

Communication. Two aspects of partner communication were assessed: frequency of communication, and mode of communication. The question, "Which best describes your level of communication with your spouse/partner while anticipating/currently deployed?" was asked to measure frequency of communication (i.e., none, very infrequently, somewhat infrequently, somewhat frequently, very frequently, and constantly). Mode of communication was measured by assessing participants' use of technological and communicative sources: telephone, letters, instant messenger, Skype, e-mail, MSN messenger, Facebook, and MySpace. Participants were asked to list any other forms of communication and to rate the most preferred mode of contact.

Demographics. Demographic questions asked about marital status (married or in a long term committed relationship with a military member), age, ethnicity, educational background, children, income, current occupation, and volunteer activities.

Participants were also asked about their military spouse's age, ethnicity, rank, number of deployments, current/anticipated/recently returned deployment location, and specific names of conflicts military spouse has fought in.

Data reduction and analysis

Hypothesis 1. The first hypothesis was that compared with each of the other two groups, (1) spouses with a partner anticipating deployment would report experiencing more fear, anger, annoyance, sense of burden, disgust, inconvenience, and worry (i.e., which I am describing as anticipating phase or "anticipatory emotions") when thinking about their partner's deployment; (2) spouses with a currently deployed partner would report experiencing more of a sense of abandonment, emptiness, loneliness, neglect, sadness, and feeling like a single parent, as well as more independence and pride (i.e., which I am describing as deployment phase or "absence emotions") when thinking about their partner's deployment; and (3) spouses with a partner who has recently returned from deployment would report experiencing more completeness, contentment, excitement, happiness, and relief (i.e., which I am describing as return phase or "post-emotions") when thinking about their partner's return from deployment. Spouses with a partner who has recently returned from

deployment also were expected to report greater marital satisfaction than spouses in the other two groups. Groups were not expected to differ in their experience of stress and anxiety with respect to their partner's deployment.

A reliability analysis was conducted for each set of emotions hypothesized to differ by group (i.e., anticipatory emotions, absence emotions, post emotions). As these emotion groupings showed adequate reliability ($\geq$.70) they were averaged into composite scores (described below). Emotion scores served as dependent measures and were compared between deployment groups (i.e., anticipating deployment, currently deployed, or recently returned from deployment) using analysis of variance (ANOVA). Ratings of stress and anxiety also were averaged and compared between groups, and ratings of marital satisfaction were compared between groups.

Hypothesis 2. Hypothesis 2 predicted that, among spouses with a currently deployed partner, less negative emotion (i.e., negative emotions total variable and the absence emotions variable) would be associated with reports of more frequent communication (based on a 6-point scale ranging from none to constant).

To test this, two Bivariate correlations were conducted (i.e., one for frequency of communication and total negative emotion, and one for frequency of communication and absence emotions).

Hypothesis 3. The third hypothesis predicted that, among spouses with a currently deployed partner, those who prefer technological forms of communication that allow for more direct or immediate contact (e.g., phone, Skype, Facebook, instant messenger) will report less negative emotion than those who prefer indirect modes of contact (e.g., e-mail, text message). Preferred methods of contact were coded by communication type: Direct (phone, Skype, Facebook, instant messenger) or Indirect (e-mail, text messaging) communication. Direct methods were coded as "1" and indirect methods were coded as "2." Two Independent-samples t-tests were performed. These analyses included the variable "Preferred method" of contact (i.e. Direct and Indirect) as the independent (grouping) variable and the two negative emotion scores of interest (i.e., negative emotions total variable and absence emotions variable) as the respective dependent variables.

RESULTS

Preliminary analyses

Demographics. I examined whether there were differences among the three groups (i.e., anticipating deployment, currently deployed, or recently returned) in several key demographic variables. I found no significant differences in age, $F(2,165) = 1.10$, $p = .334$, racial/ethnic background, $X^2(10, N = 167) = 15.89$, $p = .103$, gross household income, $X^2(8, N = 151) = 4.00$, $p = .857$, or whether or not the couple had children, $X^2(2, N = 153) = 1.60$, $p = .449$.

Reliability of emotion composites. For each set of emotions hypothesized to differ between groups, reliability (Cronbach's alpha) was as follows: fear, anger, annoyance, sense of burden, disgust, inconvenience, and worry (anticipating phase/anticipatory emotions), α= .785; sense of abandonment, emptiness, loneliness, neglect, sadness, and feeling like a single parent (deployment phase/absence emotions), α= .783; completeness, contentment, excitement, happiness, and relief (return phase/post emotions), α =.738; stressed and anxious, α= .719. Independence and pride showed low reliability (α= .400) and therefore these two emotions were examined separately. Reliability was also adequate for a composite of all negative emotions (abandoned, afraid, angry, annoyed, anxious, burdened, disgusted, empty, inconvenienced,

like a single parent, lonely, neglected, sad, stressed, worried), Cronbach's α = .887. Reliability for all positive emotions (complete, content, excited, happy, proud, relieved, independent) was Cronbach's α = .628; proud and independent were excluded (based on examining the scale mean if items were deleted), resulting in Cronbach's α = .738.

Communication frequency. On average, spouses of deployed military reported communicating "somewhat frequently" with their partner ($M = 4.24$, $SD = 1.1$).

Differences in Emotional Experience by Deployment Stage (Hypothesis 1)

Mean reports of emotions are listed by group in Tables 2 and 3 and shown in Figure 1. There were significant group differences in emotions corresponding to all three phases of deployment: anticipatory emotions, $F(2, 146) = 21.96$, $p<.001$, $\eta^2 = .231$, absence emotions, $F(2,146) = 24.37$, $p < .001$, $\eta^2 = .250$, and post-return emotions, $F(2,145) = 129.87$, $p < .001$, $\eta^2 = .642$. Follow-up pairwise comparisons revealed that spouses anticipating their partner's deployment and spouses with a currently deployed partner did not differ in reports of anticipatory emotions or absence emotions ($ps > .999$); each of these groups reported more anticipatory and absence emotions than spouses with a recently returned partner ($ps < .001$). The recently returned group reported

more post-return emotions than either of the other two groups (*p*s < .001). Therefore, my hypotheses were supported with respect to the recently returned group, but contrary to my hypotheses the anticipating deployment and currently deployed groups did not differ.

Although it was expected stress and anxiety levels would be similar across groups, there was a significant difference among groups in anxiety and stress (i.e., the average rating of self-reports of anxiety and stress), $F(2, 146) = 14.22$, $p < .001$, $\eta^2 = .163$. Post-hoc tests using Bonferroni correction showed that spouses with a recently returned partner reported significantly less stress/anxiety than spouses whose partners were either anticipating deployment or currently deployed, $p < .001$. The currently deployed and anticipating deployment groups did not differ in stress/anxiety, however, $p = .915$.

There were no significant differences in marital satisfaction when compared between groups, $F(2,139) = .638$, $p = .530$, $\eta^2 = .009$. Mean marital satisfaction by group were as follows: anticipating deployment: M= 4.73, *SD*= 1.04; currently deployed: M= 4.47, *SD*= 1.58; recently deployed: M= 4.43, *SD*= 1.29.

Communication Frequency and Emotional Experience among Spouses of Currently Deployed Partners (Hypothesis 2)

Among spouses with a currently deployed partner, less negative emotion when thinking about the partner's deployment was associated with marginally greater frequency of communication during deployment, $r(73) = -.193$, $p = .097$. Using only emotions hypothesized to be experienced more during deployment (absence emotions) as a variable, there was a significant, negative correlation between these emotions and communication frequency, $r(73) = -.273$, $p = .018$.

Mode of Communication and Emotional Experience among Spouses of Currently Deployed Partners (Hypothesis 3)

Spouses who preferred direct methods of communication ($M = 4.50$, $SD = 1.70$) did not differ significantly from spouses who preferred indirect methods of communication ($M = 4.34$, $SD = 1.83$) in overall negative emotions when thinking about one's partner's deployment, $t(69) = .249$ $p = .804$. Spouses preferring direct (M=4.76, $SD = 1.88$) versus indirect (M= 3.89, $SD = 2.40$) methods of communication also did not differ with respect to reports of absence emotions, $t(69) = .1.19$, $p = .283$.

DISCUSSION

The goals of the present study were to (1) evaluate if there would be a significant difference in emotions throughout the deployment cycle (anticipating deployment, current deployment, and recently returned from deployment); and (2) assess the relationship between negative emotions and frequency and mode of communication in at-home spouses (AHSs) whose partners were currently deployed.

Spouses whose partners were anticipating deployment and spouses whose partners were currently deployed reported experiencing more negative emotions, such as fear, anger, annoyance, sense of burden, disgust, inconvenience, and worry when thinking about their partner's deployment than spouses with a partner who had recently returned from deployment. Both groups showed these emotions and did not differ significantly from one another in their reports of these emotions. These findings are consistent with previous studies which have reported the Pre-deployment and Deployment phases as being negative, hectic, and demanding for spouses who remain at home during their partner's deployment.

Spouses whose partners were either anticipating deployment or currently deployed also experienced more of a sense of abandonment, emptiness, loneliness, neglect, sadness, and feeling like a single parent

when thinking about their partner's deployment when compared to spouses whose partners were recently returned. Spouses within the latter group reported fewer feelings of abandonment, loneliness, neglect, etc. These results suggest that specific negative emotions, such as abandonment and loneliness, which have been reported as occurring mainly during partner deployment, perhaps begin to occur when anticipating the deployment, even before one's partner leaves. These findings show that a range of negative emotions not only develop, but persist during both of these phases, making each equally hectic for the at-home spouse. In contrast, spouses whose partners were recently returned from deployment consistently reported fewer negative emotions and higher positive emotions when thinking about their partner's deployment.

In addition to reporting higher positive emotions, spouses whose partners were recently returned from deployment reported less stress and anxiety than the other two groups. These results help demonstrate that although deployment in its entirety is considered stressful, when the partner returns home, the AHS does experience some type of happiness and relief. Even further, spouses in all groups reported having above-average levels of marital satisfaction (a mean of 4 to 5 on a 0 to 6 scale where 3 indicates "happiness"), suggesting that

negative emotions may accompany deployment but perhaps can rebound afterward and do not always exact a negative toll on marital satisfaction. Rather, in my sample, AHSs were predominantly happy in their relationships throughout deployment.

While the results listed above shed light on AHSs' emotions and marital satisfaction during specific deployment phases, further analyses from this study highlight how negative emotions in spouses whose partners are currently deployed may predict subsequent patterns of behavior. Overall, findings show that spouses who experienced fewer negative emotions when thinking about their partner's deployment were more likely to engage in higher frequency of communication with their deployed partner. In other words, how a spouse perceives her partner's current deployment appears to have an effect on her communication with the deployed partner. These results suggest that AHSs who start out with a less negative sense of deployment have found more opportunities to communicate with her spouse. This may be due to greater motivation or effort on the part of one or both spouses to communicate more frequently, or on other factors (e.g., deployment assignment) that result in the spouse feeling less negative about her partner's deployment and more able to communicate with him.

While negative emotions, particularly deployment or absence-related emotions, predicted frequency of communication, in spouses whose partners are currently deployed, there was no indication that these emotions varied as a function of the type of technology used to communicate, specifically direct versus indirect methods. In this sample, however, spouses overwhelmingly preferred direct methods of communication (i.e., Skype and telephone). Though contrary to my hypothesis that emotions and preferred mode of communication would be related, these findings prove vital when studying coping in AHSs during deployment. Specifically, spouses are incorporating a number of different modes of communication to remain in contact with their deployed partner. Though deployment is a stressful event with a range of emotions, ability to communicate with one's partner, especially with the use of technological advances such as real-time video communication, may ultimately make the experience a less negative and more positive occasion than previously suspected.

Although spouses prefer using technological sources which provides direct contact, such as Skype and phone, many still make use of indirect contact, such as e-mail. Whereas previous literature (Carter et al., 2011; Greene et al., 2010; Gottman et al., 2011; Pincus et al., 2005) has addressed the pros and cons of communication for the

deployed partner and its effects on job performance, onset of mental health issues, and lower morale, the results from the current study show that for spouses remaining back on the home front, frequent communication, no matter the method, may be extremely important in alleviating many of the negative emotions felt throughout deployment.

As Merolla (2010) suggested in his research of relational maintenance, spouses find ways in planning and improvising to keep in contact with their deployed partner. Communication, on any level, with the deployed partner can be seen as a means to help reduce uncertainty about the partner's well-being and convey information on the partner's whereabouts, which have been reported as being crucial information requested regularly by families (Greene et al., 2010); thus a possible way of maintaining contact.

These results have implications for the physical, psychological, and mental well-being and health of at-home spouses when coping with deployment. For example, wives' similarly high ratings of negative emotions during the anticipating and currently deployed phases will help programs designed for military families further target areas of intervention when developing and implementing programs to assist this population.

Limitations

The present study had several limitations. This study was a cross-sectional design and did not evaluate the responses of the at-home spouse throughout the entire deployment phase (pre-deployment, current deployment, and post-deployment). Even further, only three phases of deployment were assessed for this particular study (i.e., whereas some researchers have identified up to seven stages). Sample sizes also were unequal and included relatively fewer spouses with partners recently returned from deployment. This design restricted understanding the full impact of communication on emotions as it applied to AHSs throughout the partner's deployment progression. Importantly, emotion ratings were made with reference to the time of the partner's deployment, rather than in general, which precludes assessment of how communication and technology influences emotions. Ratings also were retrospective. For AHSs whose partners had deployed or returned several weeks or months earlier, this recall could have been more difficult and possibly less accurate.

Similarly, ratings from AHSs whose partners were anticipating deployment may have varied depending on the number of days or weeks until the deployment. For spouses with a currently deployed partner, a diary component of the present study will help overcome the limitations of retrospective data collected based on one time point.

Another limitation was that participants were not asked what type of deployment operation their deployed partner would engage in (e.g., combat, peacekeeping, humanitarian), which could have also influenced their emotions.

Even further, due to the survey being posted on-line and anonymity of participants, four participants commented on being confused about the wording of level of communication questions. The confusion could have resulted in inaccurate results. Lastly, the current sample only consisted of at-home military spouses and did not include responses from their deployed partner. Deployed partners' responses could've been used to compare differences in emotions, level of communication, and marital satisfaction throughout deployment to that of their at-home spouse.

CONCLUSION

Loss of communication during physical separation from a deployed military partner has severe consequences for coping, depression, and other health concerns for the remaining spouse. As reported in previous studies, frequent and positive communication is instrumental in reducing negative emotions toward deployment.

Further research within this population could be vital in developing special programs, more resources, and better access to methods and frequency of communication for AHSs during partner deployment. Appropriate level of communication during each individual phase would generally make the transition before, during, and after partner deployment less disruptive. As noted, this would help decrease feelings of anxiety, being burdened, inconvenienced, and other negative emotions when pertaining to deployment. It is imperative that as advancements in technology, length of deployments, and ways of engaging in deployment changes, that continuing research on this population and other individuals within the military family should be investigated.

While this study primarily focuses on AHSs of deployed partners, there needs to be more research on the effects of deployment on children and adolescents and technology. These particular studies

should also examine what effects of these ever changing capabilities and advancements could possibly have on maintaining stability and coping within this population during parental deployment. There also needs to be further research conducted on dual parental military deployments, and the effects of single-parent homes, primarily focusing on the impact of leaving children with different groups such as family, extended family, and friends. In addition, only females were included in this study as participants. In future studies, male at-home spouse's reactions to deployment and engaging in the non-traditional parental role should be assessed.

REFERENCES

A Conversation with the inventor of email. Available at: http://itmanagement.earthweb.com/entdev/article.php/1408411/A-Conversation-With-The-Inventor-Of-Email.htm. Assessed 14 November 2011.

Allen, E., Rhoades, G., Stanley, S., Markman, H. (2010). Hitting home: Relationships between recent deployment, posttraumatic stress symptoms, and marital functioning for Army couples. *Journal of Family Psychology, 24* (3), 280-288.

Anonymous. *The Silent Ranks.*

Basham, K. (2008). Homecoming as safe haven or the new front: Attachment and detachment in military couples. *Clinical Social Work Journal, 36,* 83-96.

Burrell, L., Adams, G., Durand, D., Castro, C. (2006). The impact of military lifestyle demands on well-being, Army, and family outcomes. *Armed Forces and Society, 33* (1), 43-58.

Burton, C. (2009). Stress-induced somatization in spouses of deployed and nondeployed servicemen. *Journal of the American Academy of Nurse Practitioners, 21* (6), 332-339.

Carter, S., Loew, B., Allen, E., Stanley, S., Rhoades, G., & Markman, H. (2011). Relationships between soldiers' PTSD symptoms and spousal communication during deployment. *Journal of Traumatic Stress, 24* (3), 352-355.

DeBurgh, H., White, C., Fear, N., Iversen, A. (2011). The impact of deployment to Iraq or Afghanistan on partners and wives of military personnel. *International Review of Psychiatry, 23,* 192-200.

Department of Defense (2011). Strengthening our military families. Retrieved October 28, 2011, from http://www.defense.gov/home/features/2011/0111_initiative/strengthening_our_military_january_2011.pdf.

Deployment: The Emotional Phases of Deployment. Available at: http://www.military.com/benefits/resources/deployment/emotional-phases-of-deployment. Assessed 30 October 2011.

Diamond, L., Hicks, A., Otter-Henderson, K. (2008). Every time you go away: Changes in affect, behavior, and physiology associated with travel-related separations from romantic partners. *Journal of Personality and Social Psychology, 95* (2), 385-403.

Ekman, P., Friesen, W. V., & Ancoli, S. (1980). Facial signs of emotional experience. *Journal of Personality and Social Psychology, 39* (6), 1125-1134.

Facebook. Available at: http://topics.nytimes.com/top/news/business/companies/facebook_inc/index.html. Assessed 30 October 2011.

Facebook Video Calling. Available at: http://www.facebook.com/videocalling/. Assessed 14 November 2011.

Falcone, M. (2010). A phenomenological inquiry into married military couples' experience with a deployment process during the current Iraq and Afghanistan wars. *ProQuest Information and Learning.*

Flake, E., Davis, B., Johnson, P., Middleton, L . (2009). The psychosocial effects of deployment on military children. *Journal of Developmental and Behavioral Pediatrics, 30* (4), 271-278.

Greene, T., Buckman, J., Dandeker, C., Greenberg, N. (2010). How communication with families can both help and hinder service members' mental health and occupational effectiveness on deployment. *Military Medicine*, *175* (10), 745-749.

Gottman, J., Gottman, J., Atkins, C. (2011). The comprehensive soldier fitness program: Family skills component. *American Psychologist, 66* (1), 52-57.

Haas, D., Pazdernik, L., & Olsen, C. (2005). A cross-sectional survey of the relationship between partner deployment and stress in pregnancy during wartime. *Womens Health Issues, 15*, 48-54.

Huebner, A., Mancini, J., Wilcox, R., Grass, S., Grass, G. (2007). Parental deployment and youth in military families: Exploring uncertainty and ambiguous loss. *Family Relations, 56* (2), 112-122.

Johnson, D., White, L., Edwards, J., Booth, A. (1986). Dimensions of marital quality: Toward methodological and conceptual refinement. *Journal of Family Issues, 7*, 31-49.

Lapp, C., Taft, L., Tollefson, T., Hoepner, A., Moore, K., Divyak, K. (2010). Stress and coping on the home front: Guard and reserve spouses searching for a new normal. *Journal of Family Nursing, 16* (1), 45-67.

Lincoln, A., Swift, E., Shorteno-Fraser, M. (2008). Families with parents deployed in military combat. *Journal of Clinical Psychology, 64* (8), 984-992.

Logan, K. (1987). The emotional cycles of deployment. *Proceedings, 113* (2), 43-47.

McFarlane, A. (2009). Military deployment: The impact on children and family adjustment and the need for care. *Child and Adolescent Psychiatry, 22* (4), 369-373.

McLeland, K., Sutton, G., and Schumm, W. (2008). Marital satisfaction before and after deployments associated with the global war on terror. *Psychological Reports, 103,* 836-844.

Medway, F., Davis, K., Cafferty, T., Chappell, K. (1995). Family disruption and adult attachment correlates of spouse and child reactions to separation and reunion due to Operation Desert Storm. *Journal of Social and Clinical Psychology*, *14* (2), 97-118.

Merolla, A. (2010). Relational Maintenance during Military Deployment: Perspectives of Wives of Deployed US Soldiers. *Journal of Applied Communication Research*, *38* (1), 4-26.

Newby, J., McCarroll, J., Ursano, R., Fan, Z., Shigemura, J., & Tucker-Harris, Y. (2005). Positive and negative consequences of a military deployment. *Military Medicine, 170*, 815-819.

Park, N. (2011). Military children and families: Strengths and challenges during peace and war. *American Psychologist, 66* (1), 65-72.

Peebles-Kleiger, M., Kleiger, J. (1994). Re-integration stress for Desert Storm families: Wartime deployments and family trauma. *Journal of Traumatic Stress*, *7* (2), 173-194.

Pincus, S. House, R., Christenson, J., Adler, L.: The Emotional Cycle of Deployment: A Military Family Perspective, 2005. Available at http://www.hooah4health.com/deployment/familymatters /emotionalcycle,htm; Accessed November 18, 2011.

Roberts, N.A. & Levenson, R.W. (2006). Subjective, behavioral, and physiological reactivity to ethnically-matched and ethnically-mismatched film clips. *Emotion, 6* (4), 635-646.

Rossetto, K. (2010). "You can freak out or deal with it": Military wives' perspectives on communication and family resilience, coping, and support during deployment. *ProQuest Information and Learning.*

Sahlstein, E., Maguire, K., & Timmerman, L. Contradictions and Praxis contextualized by wartime deployment: Wives' perspectives revealed through relational dialectics. *Communication Monographs, 76* (4), 421-442.

Schumm, W., Bell. B., Ender, M., Rice, R. (2004). Expectations, use, and evaluations of communication media among deployed peacekeepers. *Armed Forces and Society*, *30*, 649-662.

Sheppard, S., Malatras, J., Israel, A. (2010). The impact of deployment on U.S. military families. *American Psychologist, 65* (6), 599-609.

Skype: About Skype. Available at: http://about.skype.com. Accessed 30 October 2011.

Spira, J., Johnston, S., McLay, R., et al. (2010). Expert Panel: Future directions of technological advances in prevention, assessment, and treatment for military deployment mental health. *Cyperpsychology, Behavior, and Social Networking, 13* (1), 109-117.

Vormbrock, J. (1993). Attachment theory as applied to wartime and job-related marital separation. *Psychological Bulletin, 114* (1), 122-144.

Wiens, T. W., & Boss, P. (2006). Maintaining family resiliency before, during, and after military separation. In C. A. Castro, A. B. Adler, & T. W. Britt (Eds.), *Military life: The psychology of serving in peace and combat. Vol. 3. The military family* (pp. 12–38). Westport, CT: Praeger Security International.

Windows Live Messenger. Available at: http://windows-live-messenger-2011.en.softonic.com/Assessed 14 November 2011.

APPENDIX A

COVER LETTER

EFFECTS OF DEPLOYMENT ON MILITARY FAMILIES

Dear Participant:

My name is Katrina D. Powell and I am a graduate student under the direction of Professor Nicole Roberts in the Division of Social and Behavioral Sciences in the New College of Interdisciplinary Arts and Sciences at Arizona State University (ASU).

I am conducting a research study among military spouses/partners to understand issues pertaining to military deployment. This research involves completing a set of questionnaires. On these questionnaires, we are interested in gathering information about your thoughts and feelings as they relate to your spouse or partner's military deployment.

Your participation in this study is voluntary. You have the right not to answer any question, and to stop participating at any time. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 years or older to participate in this study.

If you decide to participate, we expect the questionnaires will take approximately 35-45 minutes to complete. You can complete the survey on-line via Surveymonkey.com. You WILL NOT be able to go back in and finish the survey once you have exited. Please make sure you have allotted enough time to take the survey.

To thank you for participating in this study, you are invited to enter into a drawing to receive one of several prizes: a spa day, a $50 Target gift card, a camera or webcam, a gift certificate to a JC Penney photo studio for a family photo, or a certificate to Staples for a family calendar. Entry into the drawing is optional. At the end of the survey you will be asked if you would like to participate in the drawing. If so, you will be directed to another link where you would provide your contact information for this purpose only, therefore, your contact information would be kept separate from your questionnaires. Winners will be selected at random, and again, your contact information will not be linked to your questionnaire responses in any way. In addition, if you are interested, you can provide your contact information to the research team and a copy of the findings will be sent to you upon completion of this research. If you provide your contact information for this purpose, it will be kept separate from your questionnaires.

Finally, although not necessarily of direct benefit to you, knowledge of family life among military spouses/partners before, during, and after deployment can help lead to interventions to manage the impact of deployment on relationships more effectively.

Responses will be anonymous. The results of this research study may be used in reports, presentations, and publications, but your name will not be known. All information will be presented in group form. Responses will be stored on a password protected computer that only the research team can access.

Should you experience problems or have questions while completing this survey, please contact the research team by email: [redacted] or [redacted], or leave a confidential message on our 24-hour lab voice mail: [redacted] or [redacted]. At the beginning of the survey, you will be asked to put in a codename of your choice. This codename allows the research team to recognize your survey should you encounter difficulties during the survey. It will also allow your survey responses to remain anonymous.

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at [redacted].

Completion of the questionnaires will be considered your consent to participate in this study.

Sincerely,

Katrina D. Powell, M.A.

Nicole Roberts, Ph.D.

APPENDIX B

RECRUITMENT FLYER

Do you have a spouse or partner in the military?
Has he/she ever deployed?

What: Research study of Deployment and Military Spouses

Who: Military spouses, 18 years or older

When: At your convenience; 35-45 minute survey to complete and/or two weeks of diary entries (less than 10 minutes per entry)

Where: On-line!

Why: Help us learn more about how military deployment affects family life and relationship satisfaction in military spouses and partners

Participants also can enter a drawing to win one of several prizes: a spa day, a $50 Target gift card, a camera or webcam, a gift certificate to a JC Penney photo studio for a family photo, and a certificate to Staples for a family calendar

How: Just go on line and take the survey! Here is the link:

[redacted]

*At the end of the survey, you will be asked whether you are willing to also complete the diary portion of the study.

Sincerely,

Katrina D. Powell, M.A.

Nicole A. Roberts, Ph.D.
Arizona State University

APPENDIX C

FIGURES I AND 2

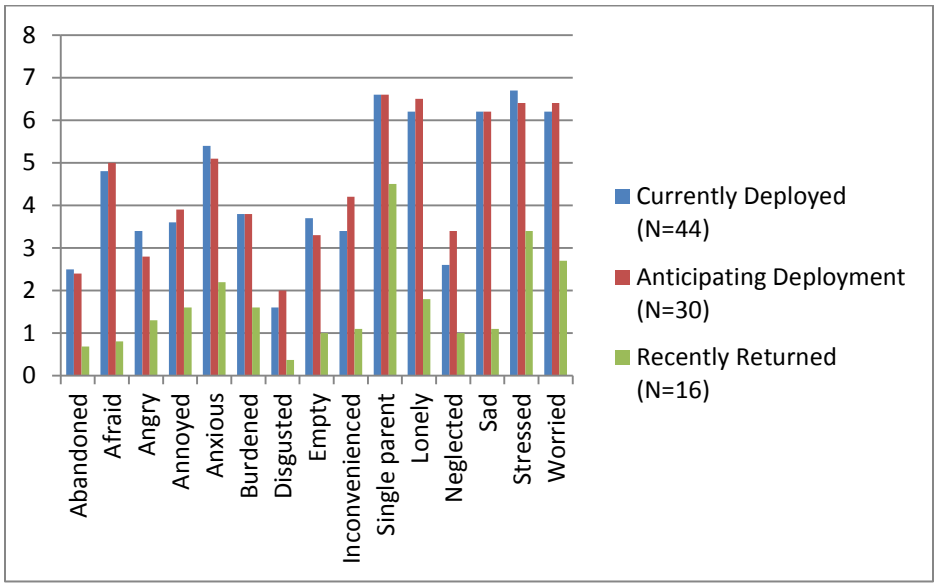

Figure I. Negative emotions by deployment stage.

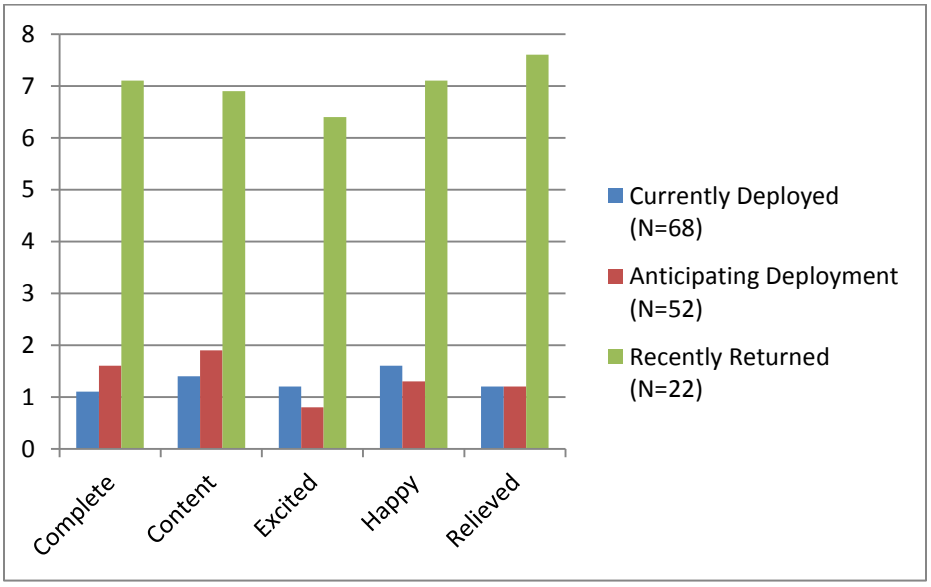

Figure II. Positive emotions by deployment stage.

APPENDIX D

TABLES I, II, III, AND IV

Table I

Emotions, communication, and use of technology survey questions by deployment phase

(A) Currently Deployed	(B) Anticipating Deployment	(C) Recently Returned
Please rate how much each of these feelings applied to you WHEN YOUR SPOUSE/ PARTNER DEPLOYED, using the 0 to 8 scale below: -Not at all (0), In between (4), Extremely (8)	Please rate how much each of these feelings applies to you when you think about your spouse/partner's upcoming deployment, using the 0 to 8 scale below: -Not at all (0), In between(4), Extremely (8)	Please rate how much each of these feelings applies to you since your spouse/partner HAS RETURNED FROM DEPLOYMENT, using the 0 to 8 scale below: -Not at all (0), In between(4), Extremely (8)
Which best describes your level of communication with your spouse/partner **while** he/she is **deployed**? -None -Very infrequently -Somewhat infrequently - Somewhat frequently - Very frequently - Constantly		

What methods do you use to keep in contact with your deployed spouse/partner? (Please check all that apply): - Phone - Skype - E-mail - Text messaging - MSN Messenger - Facebook - MySpace - Letters - Other		
Of the previous options you selected, which is your MOST PREFERRED method of contact for communicating with your deployed spouse/partner? - Phone - Skype - E-mail - Text messaging - MSN Messenger - Facebook - MySpace - Letters - Other		

Table II

Negative emotions Means/SD by deployment stage

	Currently Deployed (N=44)	Anticipating Deployment (N=30)	Recently Returned (N=16)
Abandoned	2.5(*SD*=2.7)	2.4(*SD*=2.6)	.69(*SD*=1.6)
Afraid	4.8(*SD*=2.5)	5.0(*SD*=2.6)	.81(*SD*=1.8)
Angry	3.4(*SD*=2.8)	2.8(*SD*=2.2)	1.3(*SD*=2.1)
Annoyed	3.6(*SD*=2.5)	3.9(*SD*=1.9)	1.6(*SD*=2.2)
Anxious	5.4(*SD*=2.4)	5.1(*SD*=2.8)	2.2(*SD*=2.5)
Burdened	3.8(*SD*=2.9)	3.8(*SD*=2.7)	1.6(*SD*=2.4)
Disgusted	1.6(*SD*=2.8)	2.0(*SD*=3.1)	.37(*SD*=1.5)
Empty	3.7(*SD*=3.2)	3.3(*SD*=2.9)	1.0(*SD*=2.0)
Inconvenienced	3.4(*SD*=2.9)	4.2(*SD*=2.6)	1.1(*SD*=1.7)
Single parent	6.6(*SD*=2.7)	6.6(*SD*=2.8)	4.5(*SD*=4.2)
Lonely	6.2(*SD*=2.2)	6.5(*SD*=1.9)	1.8(*SD*=2.3)
Neglected	2.6(*SD*=2.8)	3.4(*SD*=3.0)	1.0(*SD*=2.0)
Sad	6.2(*SD*=2.1)	6.2(*SD*=1.8)	1.1(*SD*=2.1)
Stressed	6.7(*SD*=1.9)	6.4(*SD*=1.9)	3.4(*SD*=2.5)
Worried	6.2(*SD*=2.3)	6.4(*SD*=2.0)	2.7(*SD*=2.8)
"Anticipating" emotions	3.9 (*SD*=1.9)	4.0 (*SD*=1.8)	1.2 (*SD*=1.7)
"Absence" emotions	4.7 (*SD*=1.9)	4.5 (*SD*=1.8)	1.6 (*SD*=2.1)
"Post" emotions	1.4 (*SD*=1.5)	1.3 (*SD*=1.4)	6.8 (*SD*=1.5)

Table III

Positive emotions Mean/SD by deployment stage

	Currently Deployed (N=68)	Anticipating Deployment (N=52)	Recently Returned (N=22)
Complete	1.1	1.6	7.1
Content	1.4	1.9	6.9
Excited	1.2	0.8	6.4
Happy	1.6	1.3	7.1
Relieved	1.2	1.2	7.6

Table IV

Methods of communication used and most preferred to communicate with a currently deployed partner

Method of Communication[1]	N	%
Phone	97	58.4
Skype	92	55.4
E-mail	114	68.7
Text Messaging	35	21.1
MSN Messenger	6	3.6
Facebook	78	47
MySpace	2	1.2
Letters	76	45.8
Most Preferred		
Phone	21	12.7
Skype	37	22.3
E-mail	7	4.2
Text Messaging	1	0.6
MSN Messenger	1	0.6
Facebook	3	1.8
MySpace	0	0
Letters	0	0

[1]*Note*: Participants were asked to check all that apply when answering method of communication question.

APPENDIX E

INSTITUTIONAL REVIEW BOARD (IRB) EXEMPTION

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Nicole Roberts FAB
From:	Mark Roosa, Chair Soc Beh IRB
Date:	08/26/2011
Committee Action:	**Exemption Granted**
IRB Action Date:	08/26/2011
IRB Protocol #:	1108006769
Study Title:	Deployment and military families

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.